



Impact of California Title 24 Energy Code

June 12, 2019

Gabriel D. Taylor, P.E.

California Energy Commission

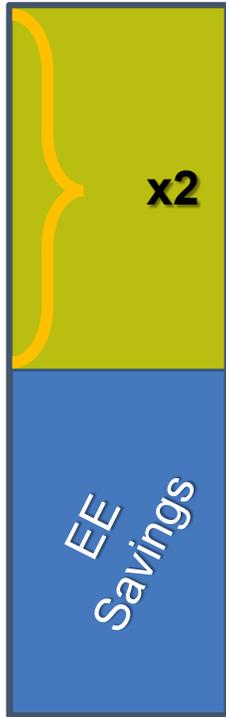


Goals

- California Policy
- OpenADR in 2019 Title 24
- 2022 Title 24 Schedule



California Policy



SB 350



AB 758



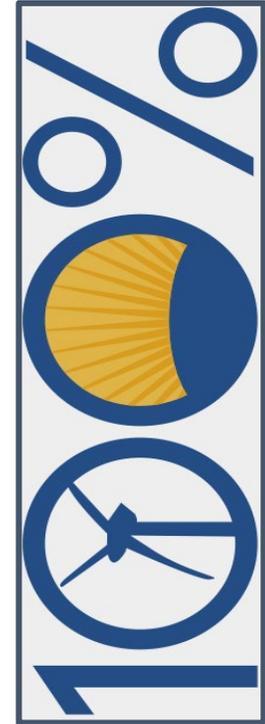
SB 1477



SB 1414



AB 3232



SB 100

DR / DO / DER

Demand Response – Demand Optimization – Distributed Energy Resources

SHAPE

SHIFT

SHED

SHIMMY

Years

Seasons

Days

Day/Night

Hours

Minutes

Seconds

California Code of Regulations Title 24 (Building Standards) Part 6 (Energy Code)



2019 Energy Code Demand Response Changes

- Cleanup & Consolidate
- Specify OpenADR
- New Definitions
- Revise Joint Appendix 5 (JA-5)



Energy Code: Title 24, Part 6

Demand Responsive Controls (§110.12)

(a) Demand responsive controls.

1. All demand responsive controls shall be either:
 - A. A certified OpenADR 2.0a or OpenADR 2.0b Virtual End Node (VEN), as specified under Clause 11, Conformance, in the applicable OpenADR 2.0 Specification; or
 - B. Certified by the manufacturer as being capable of responding to a demand response signal from a certified OpenADR 2.0b Virtual End Node by automatically implementing the control functions requested by the Virtual End Node for the equipment it controls.

Energy Code: Title 24, Part 6

Demand Responsive Controls (§110.12(a)1A)

(a) Demand responsive controls.

A certified OpenADR 2.0a or OpenADR 2.0b Virtual End Node (VEN), as specified under Clause 11, Conformance, in the applicable OpenADR 2.0 Specification; or

Energy Code: Title 24, Part 6

Demand Responsive Controls (§110.12(a)1B)

Certified by the manufacturer as being capable of responding to a demand response signal from a certified OpenADR 2.0b Virtual End Node by automatically implementing the control functions requested by the Virtual End Node for the equipment it controls.

2019 Energy Code: Demand Response

■ Nonresidential

1. Thermostats
2. Lighting
3. EMC
4. General

■ Multifamily

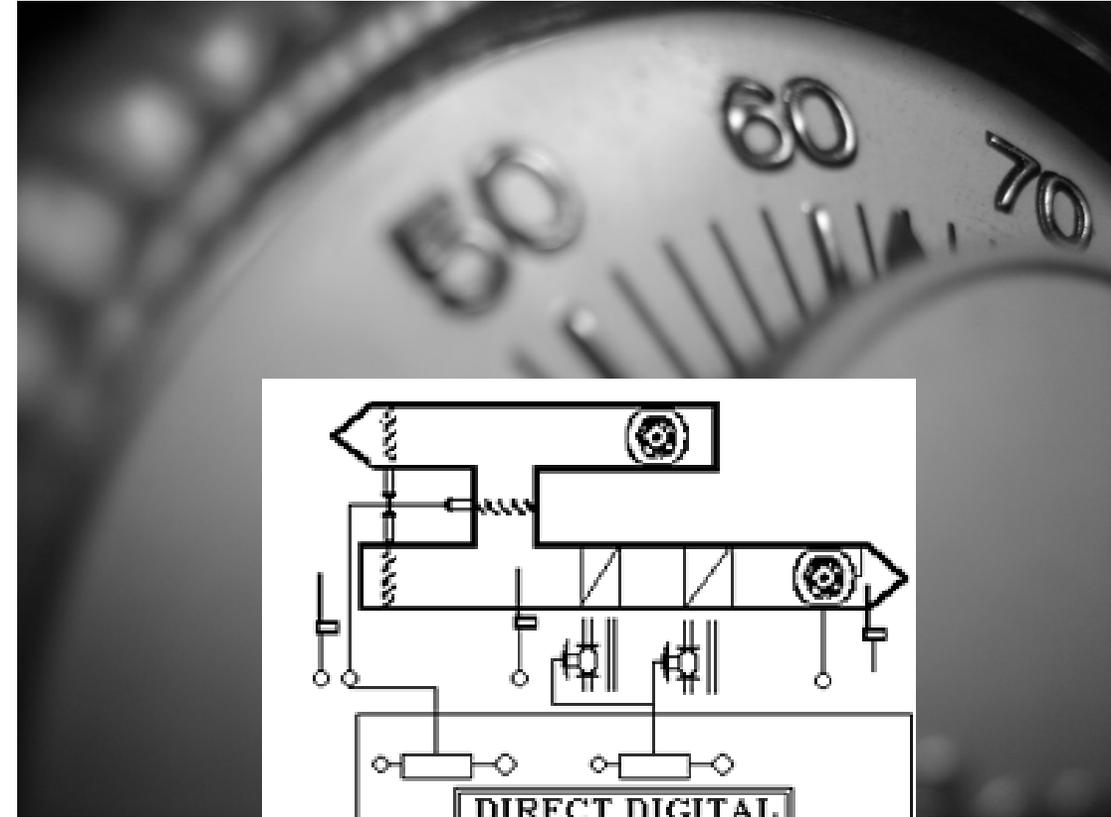
5. Solar Ready

■ Residential

6. Solar Ready
7. Water Heaters
8. HVAC

1. Nonresidential: Thermostats

- Single Zone
 - A/C & Heat Pumps
- Single Zone w/ DDC
 - Additional Shed Requirements
- Alterations
 - §120.2(b), 120.2(h) → 110.12(b), & 141(b)2E



REQUIRED

2. Nonresidential: Lighting

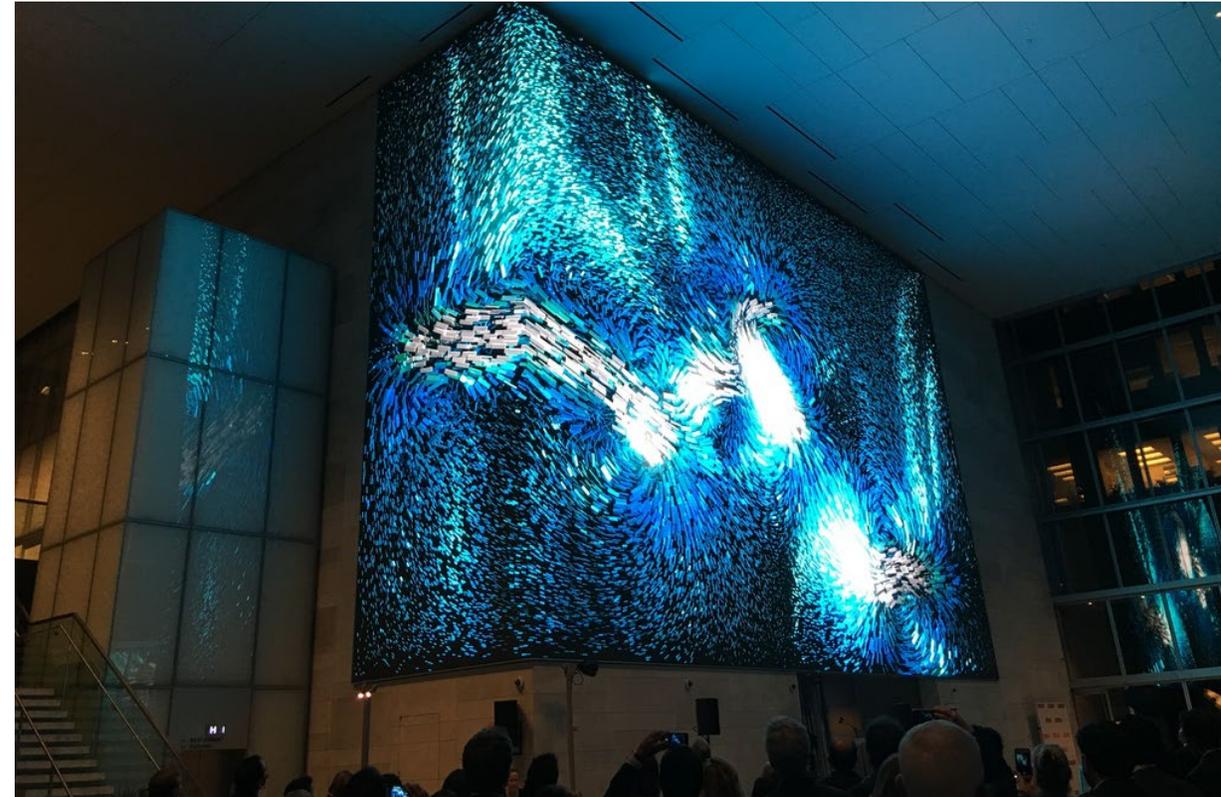
- Lighting Controls
- Buildings $>10,000$ ft²
- LPD > 0.5 W/ft²
- §130.1(e) → 110.12(c)



REQUIRED

3. Nonresidential: EMC

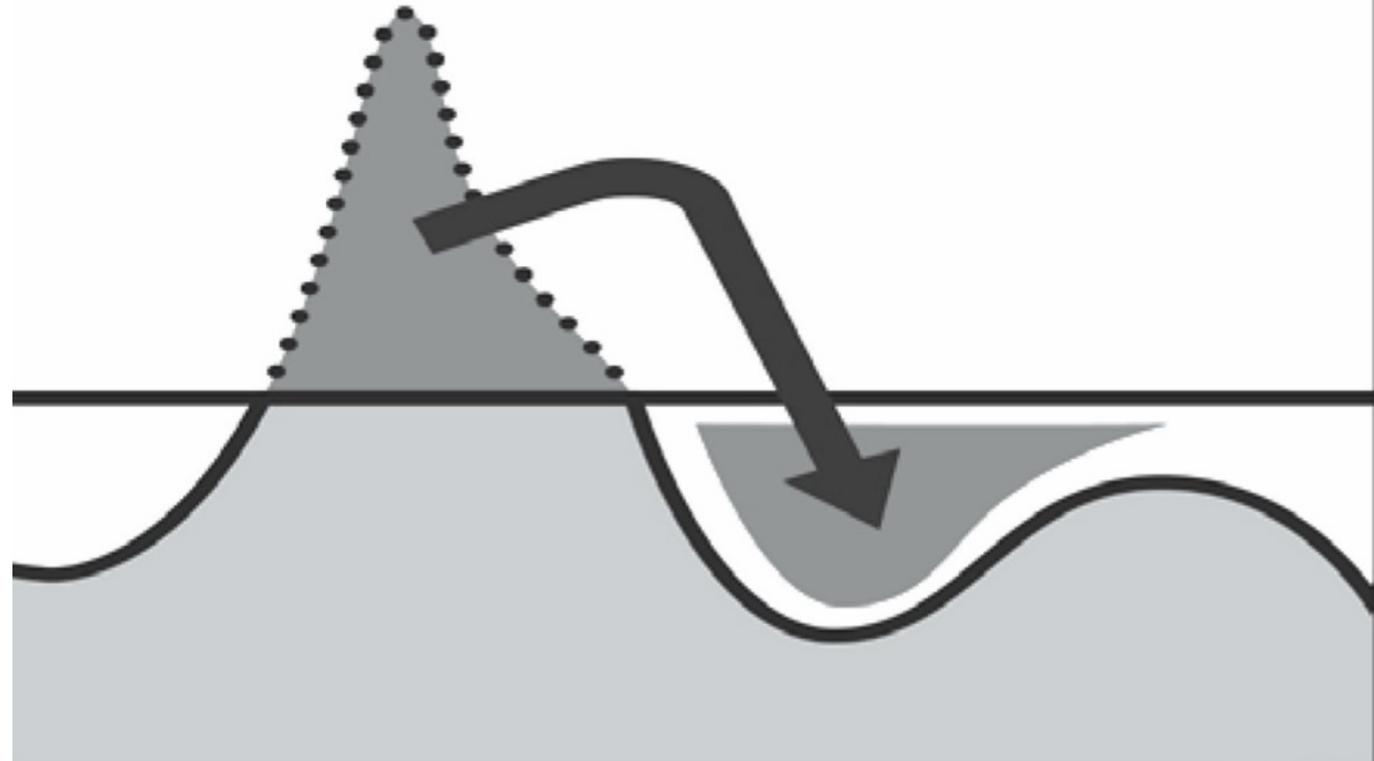
- Electronic Message Centers (EMC)
- > 15 kW
- >30% Reduction
- §130.3(a)3 → 110.12(d)



REQUIRED

4. Nonresidential: General

- Demand Responsive Controls
- For Compliance or Credit
- §130.5(e) → 110.12



REQUIRED

5. Multifamily: Solar Ready

- DR Thermostats +
Either:
 - Additional EE, or
 - EV Chargers
- **0 ft²** of Solar Ready
 - Down from 250 ft²
- §110.10(b)1B



OPTIONAL

6. Residential: Solar Ready

- DR Thermostats
 - = **150 ft²** of Solar Ready
 - Down from 250 ft²
- DR Thermostats + Additional EE
 - = **0 ft²** of Solar Ready
- §110.10(b)1A



OPTIONAL

7. Residential: Water Heaters

- Heat Pump Only
- Alterations Only
- Optional:
 - §110.12, or
 - NEEA Tier 3
- §150.2(b)1Hiii b & c



OPTIONAL

8. Residential: Thermostats

- Alterations Only
- Optional Testing Allowance
- Rare Cases
- EXCEPTION to §150.2(b)1Fiia
- EXCEPTION to §150.2(b)1Fiib



OPTIONAL

2019 Energy Code: Demand Response

■ Nonresidential

1. Thermostats
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■ Multifamily

5. Solar Ready

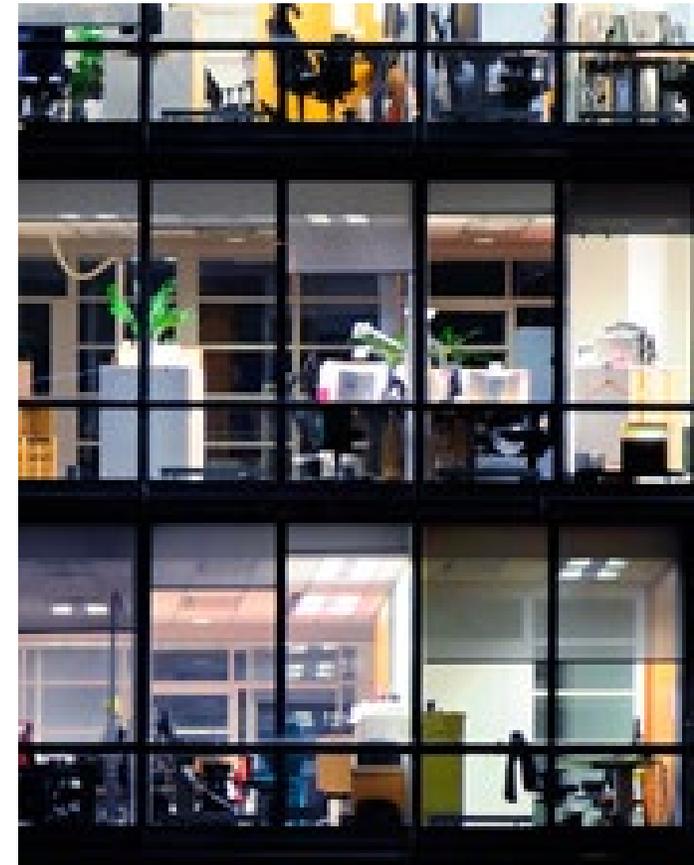
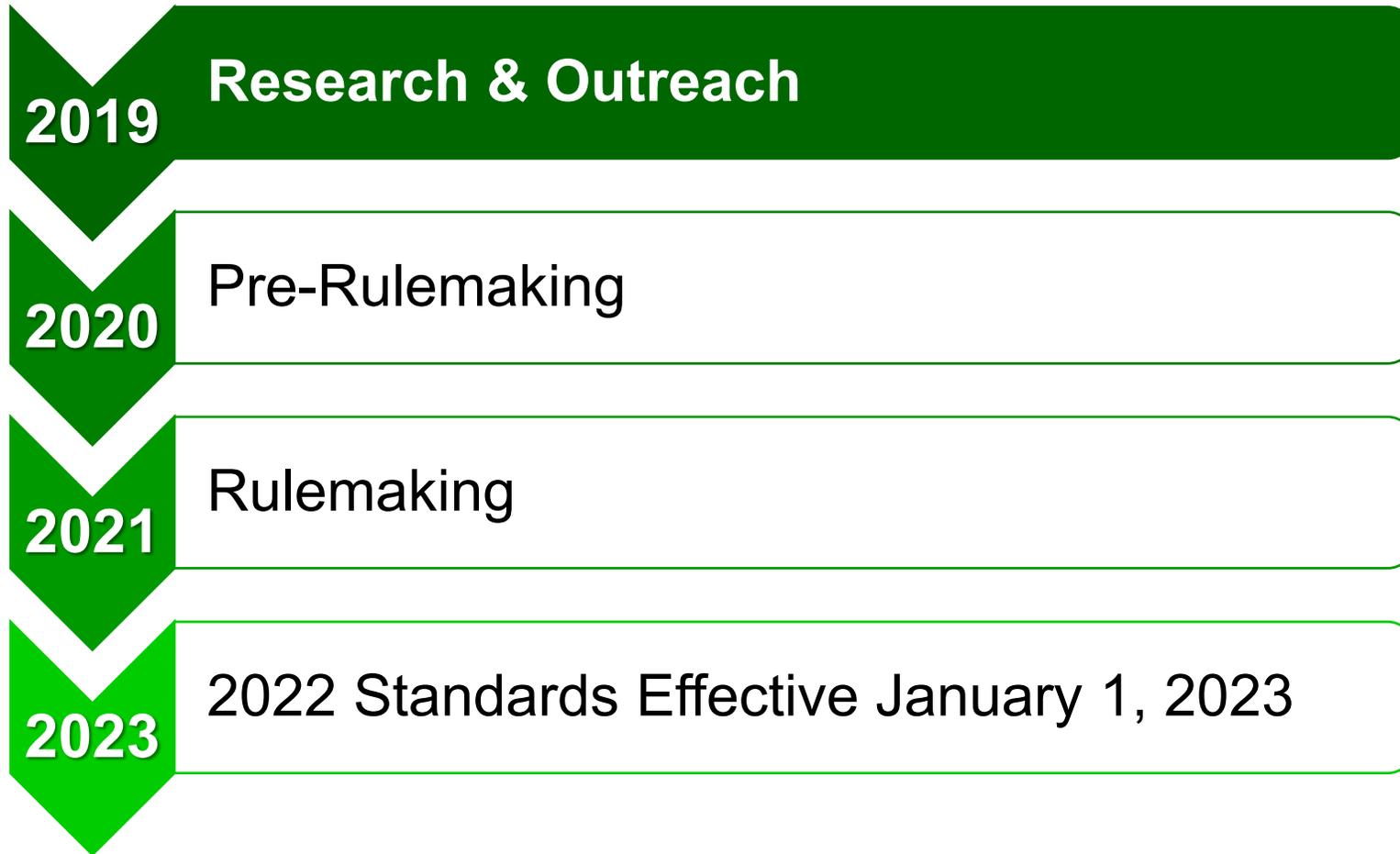
■ Residential

6. Solar Ready
7. Water Heaters
8. HVAC

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Schedule: **2022** Title 24 Standards



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